separation and quantitation of lipoprotein classes, measurement of cholesterol and triacylglycerol and ends with clinical evaluation of laboratory data. In this chapter, and the one on lipases, inclusion of the reasoning behind certain procedures is very necessary for investigators tempted to meddle with methodology.

Two further useful chapters cover qualitative and quantitative separation of human apolipoproteins and the separation and analysis of high-density lipoprotein and low-density lipoprotein subfractions while a third timely section deals with analysis of tissue lipoproteins. There was little reference to the ever growing use of high-performance liquid chromatography.

Even workers already in the field will find much of interest in the chapters on immunological methods for studying and quantifying lipo- and apolipoproteins and lipoprotein–receptor interactions. The latter chapter is devoted to methods for cell lines but some reference to studies on receptors in animal tissue would have been useful.

The inclusion of the concise chapter on lipoprotein turnover and metabolism might give the impression that these are straightforward, everyday experiments. A longer introduction, more references to the theory and further indications of the problems of interpretation would have been beneficial.

Very informative is the three part chapter on the assay of lipoprotein lipase, hepatic lipase, cholesterol esterifying enzymes and hydroxymethylglutaryl coenzyme A reductase including problems encountered The editors, probably wisely, decided to omit the molecular biology of lipoproteins.

This book brings together in one compact volume the methodology required for work on lipoproteins and related enzymes and is a must for researchers entering any of these areas as well as being useful to those already in the field.

Megs Rogers

Reconstitution of Intracellular Transport (Methods in Enzymology, Vol. 219); edited by James Rothman, Academic Press; San Diego, London, 1992; xxvii + 438 pages. £55.00, $75.00. ISBN 0-12-182120-X.

The past 10 to 15 years have seen a profound increase in our understanding of the molecular events which constitute the subcellular trafficking of proteins, and it is fitting that one of the most accomplished workers in this vast field has been given the job of editing what is a rigorously detailed collection of protocols. As is usually the case with the Methods in Enzymology texts, the book serves as an excellent laboratory manual for both novice and experienced worker, and the level and treatment of the methodology is generally beyond reproach.

Reflecting the bias of the two predominant schools of research, the methodology is divided into two principal sections focusing on cell-free systems for the study of transport, and on the use of permeabilised (semi-intact) cell systems. All chapters have been contributed by outstanding researchers, and in general almost no aspect of membrane trafficking or transport is overlooked, with sections on transport between the Golgi stacks, endosomal fusion, transcytosis, secretion and nuclear envelope assembly to mention but a few. A third section covers the isolation of intermediates in the transport machinery, such as clathrin-coated vesicles, fusion proteins, and the rab protein family. While much of the book is focused on mammalian cell-based systems, some detailed coverage of yeast systems and the important contribution to our understanding of secretion provided by the sec and ypt mutants is provided by excellent chapters from Novick and Schekman.

As is the custom with these volumes, the methodology is clearly laid out, with detailed lists of reagents and equipment required, and also detailed descriptions of yeast strains and cell culture lines so often overlooked in other laboratory manuals. While on the whole a well produced book, there were a few minor niggles which perhaps could have been avoided. For example, the chapter on rab proteins covers 10 printed pages, but covers isolation of cDNAs, site-directed mutagenesis, expression and purification of recombinant rab proteins and GTP binding assays, all in a very superficial way. In addition, the inclusion of brief protocols for the generation of antibodies and their subsequent affinity purification in another chapter were not described in sufficient detail to be useful to the novice, and perhaps the authors would have been better served to cite a more specific text for methods which are not specific to the issue of intracellular transport. However, this is a minor blemish on an otherwise highly commendable and useful text, which I am sure will be of use to researchers in all areas of this vast research field.

Gwyn W Gould

Manganese Redox Enzymes; edited by V.L. Pecoraro, VCH Publishers; New York, Weinheim and Cambridge, 1992; x + 290 pages. DM 186.00. ISBN 0-89573-729-9.

Manganese is a trace element which until recently was perceived mainly as behaving rather like magnesium. The Mn^{2+} ion activates a number of kinases and oxidoreductases. However manganese is a transition ion and has a far richer chemistry in its higher oxidation states Mn(III) and Mn(IV). In particular it can readily form clusters of two or more manganese ions. Manganese redox chemistry is exploited by nature in a number of enzyme systems. The first chapter of this book draws attention to these enzymes, including manganese-containing superoxide dismutase, catalase, ribonucleotide reductase, and thiosulphate oxidoreductase. After